

## Twin studies and homosexuality

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### **Bailey and Pillard (1991): occurrence of homosexuality among brothers**

- 52% of identical (monozygotic) twins of homosexual men were likewise homosexual
- 22% of fraternal (dizygotic) twins were likewise homosexual
- 11% of adoptive brothers of homosexual men were likewise homosexual

J.M. Bailey and R.C. Pillard, "A genetic study of male sexual orientation," *Archives of General Psychiatry*, vol. 48:1089-1096, December 1991.

### **Bailey and Pillard (1993): occurrence of homosexuality among sisters**

- 48% of identical (monozygotic) twins of homosexual women were likewise homosexual (lesbian)
- 16% of fraternal (dizygotic) twins were likewise homosexual
- 6% of adoptive sisters of homosexual women were likewise homosexual

Bailey, J. M. and D. S. Benishay (1993), "Familial Aggregation of Female Sexual Orientation," *American Journal of Psychiatry* 150(2): 272-277.

### **from Deborah Blum, *Sex on the Brain: The Biological Differences Between Men and Women* (NY: Viking, 1997), 132-133**

...homosexuality has been around for countless generations without its nonreproductive aspect making a dent in the unbelievable flood of humanity across the planet. In fact, considering the march of human population—some six billion and counting—I could make the argument that the planet would be a little healthier if we had more same-sex couples and fewer heterosexual couples busy pursuing their reproductive potential.

"The essential genetics may not directly code for homosexuality at all, but something correlated with it," Bailey emphasizes. "Something that's advantageous. What is it? We don't know. The alternative idea is that it's simply darned hard for biology to guarantee heterosexuality every time, that it's not a stable system. The problem with that [theory] is that if it's hormones that set sexual orientation, they don't seem to have much problem guaranteeing that men get penises. So, why can't they keep sexual orientation straight? On the other hand, homosexuality is very rare...in other words, we don't know."

It was Bailey, with colleague Richard Dillard of Boston University, who set off today's zealous hunt for the genetics of sexual orientation. They put together a series of studies that almost everyone agrees established that there's a genetic "something" in sexual orientation. "Everyone likes to nitpick," says Daryl Bern, a psychologist at Cornell University. "In the end it comes down to whether you believe the

data or not. I believe the data. And part of that is that I trust Mike Bailey. He's very honest about what he has and he's very cautious in interpreting it."

In the early 1990s, Bailey and Dillard published a series of studies of twins, based on interviews with gay and straight brothers. There's a solid logic to twin studies: basically, people produce two types of twins—monozygotic (one egg, split) and dizygotic (two eggs, hanging out together). Most of us call monozygotic twins identical and dizygotic twins fraternal. The difference is more complex, and more interesting, than whether the twins have matching faces. Because they come from the same egg, identical twins get identical genetic material—barring, say, the occasional mutation. Fraternal twins, from different eggs, are as genetically close as any other siblings—about a 50 percent match. But, like identical twins, they share what scientists call a "twinned" environment. They develop in exactly the same amniotic fluid, equally exposed to whatever the mother eats or drinks. They age at the same rate, playing more closely than siblings separated by many years. Identical or fraternal, they are treated by others as a unit in the way that other siblings are not. If you want to search for heritable influences by comparing the tightly matched genetics of an identical twin to the standard genetic link between siblings, fraternal twins are the best way to do so. They let you filter out environmental interference.

Bailey and Pillard recruited 110 pairs of male twins, half identical, half fraternal. In each case, they knew that one twin was gay. They then sent a questionnaire to the other brother in each pair, to determine his sexual orientation. Among the identical twins, 52 percent of the brothers were gay. Among the fraternal twins, the number was 22 percent, high enough above the background population rate to suggest that there was something distinctive in those families. The researchers found a very similar pattern with lesbians.

And Bailey has looked for confirmation abroad. His recent study out of the Australian Twin Registry, with almost 5,000 participants (roughly 1,800 sets of twins and 1,300 unmatched twins), also tracked the same pattern. Bailey is quick to emphasize, too, that his initial study wasn't the first along these lines. A somewhat informal study in the 1940s, in which the researcher persisted in calling his subjects members of the "underworld," also found a very high probability that if one identical twin was gay, the other would be as well.

Still, Bailey worries that the survey methods—he and Pillard advertised for participants through gay newspapers—may have produced slightly inflated results. That is, people who read advocacy newspapers, who choose to respond to a publicly advertised survey, who enjoy the scrutiny, who like to call attention to their lifestyle whatever it may be, may not reliably represent the entire community. That was one reason why he turned to the broader-based Australian study—and was reassured by the similar results.

### **on related issues:**

Simon LeVay, "A difference in hypothalamic structure between heterosexual and homosexual men," *Science*, vol. 253:1034-1037, 1991.

W. Byne and B. Parsons, "Human sexual orientation," *Archives of General Psychiatry*, vol. 50:228-239, March 1993.